No. 9300243

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9071'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-ninth day of September in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Marsha A. Stuntz
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.

3. VARIETY NAME
9071

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
700 Capital Square
400 Locust
Des Moines, IA 50309

5. PHONE *(Include area code)*
(515) 270-3582

FOR OFFICIAL USE ONLY

PVPO NUMBER
9300243

FILING
Date: June 16, 1993
Time: 9:40 ☒ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $ 2325.00
Date: June 7, 1993
Certificate Fee: $ 300.00
Date: Sept. 5, 1995

6. GENUS AND SPECIES NAME
Glycine max

7. FAMILY NAME *(Botanical)*
Leguminosae

8. CROP KIND NAME *(Common Name)*
Soybean

9. DATE OF DETERMINATION
September 1987

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

John Grace
7301 NW 62nd Ave., P.O. Box 85
Johnston, IA 50131-0085

Mike Roth (copy)
700 Capital Square, 400 Locust Street
Des Moines, IA 50309

PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 6/11/93
g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____ .)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☐ YES (If "YES," give names of countries and dates)
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
D. John Grace	Soybean Research Manager	6/1/93
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE

Pioneer Hi-Bred Int'l, Inc.
PVP Application 9071 Soybean
March 24, 1993

Exhibit A

ORIGIN AND BREEDING HISTORY

Breeding History of 9071 Soybean

1985 (Spring) A cross was made between '9061' and '9181' in a greenhouse at Pioneer's St. Joseph IL station. The stock number "3916" was assigned to identify the population created by this cross.

1985 (Summer) F1 plants from cross 3916 were grown in Cedar Falls, IA.

1985-86 (Winter) F2 and F3 populations derived from cross 3916 were grown using modified single seed descent in Kekaha, Hawaii.

1986 (Summer) Individual plant selections were pulled from the F4 population grown at Cedar Falls, IA.

1987 F4-derived F5 progeny rows were grown in Redwood Falls, MN. Progeny row no. 5601 was selected and designated "3916F38".

1988 3916F38 was tested in the preliminary yield trial "RFD01200" in Minnesota. Based upon superior yield performance, the line was advanced to regional advanced trials in 1989.

1989 3916F38 was tested in the 1989 advanced regional trial "RFA1B100" grown in Minnesota and South Dakota. Based on superior yield performance, 3916F38 was advanced to wide area testing in 1990. Purification was initiated by harvesting individual plants from a bulk of the line grown in Redwood Falls, MN.

1990 First year in wide area tests across the Northern U.S. and Ontario, Canada (designated "W3916F38"; experiments RFA0L000, NPA0L000 and CFA00000). Purification rows derived from the individual plants harvested in 1989 were grown and offtype sublines discarded.

1991 Second year in wide area tests (designated "Y3916F38"; experiments RFA0L000, NPA0L000, and CFA00000). A 5.0 acre purification block was grown from sublines harvested in 1990. Ninety-one sublines were bulk harvested to form the original breeder seed lot.

1992 Third year in wide area testing (designated "XB08B"; experiments RFA0L000, NPA0L000, and CFA00000). Pioneer's Parent Seed Department assumed responsibility for line maintenance.

1993 Based on superior yield performance, iron-deficiency chlorosis tolerance in the North Central U.S. and multi-race Phytophthora resistance, the line was released as Pioneer Brand 9071.

Exhibit A

ORIGIN AND BREEDING HISTORY

Breeding History of 9071 Soybean (continued)

Thus, 9071 has undergone four years of extensive testing and purification. It has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants.

Five acres of 9071 (breeder's seed) were grown in 1991. Eighty acres of 9071 (foundation seed equivalent) were grown in 1992.

Pioneer Hi-Bred Int'l, Inc
PVP Application 9071 Soybean
March 24, 1993

EXHIBIT B: NOVELTY STATEMENT CONCERNING 9071 SOYBEAN

To our knowledge, variety 9071 is most similar to 9061, 9062 (PVP applied for), L0780, and S06-57. 9071 differs from 9061 in that it is resistant to Phytophthora race 3 while 9061 is not. 9071 differs from 9062 in that it's protein content is approximately 1.9% lower (Table 1). 9071 differs from L0780 in that it has purple flowers; L0780 has white flowers. 9071 differs from S06-57 in that 9071 has significantly lower (3.6%) protein content and significantly higher (3.1%) oil content (Tables 2 and 3, respectively).

Other varieties of similar maturity and their differences:

Variety	Difference
9091	9071 is resistant to race 3 of Phytophthora, 9091 is not
9181	9071 is 10 to 14 days earlier maturing than 9181
A0358	9071 has purple flowers, A0358 has white flowers
A0949	9071 has purple flowers, A0949 has white flowers
AP0500	9071 is resistant to race 3 of Phytophthora, AP0500 is not
AP0919	9071 has a yellow hilum, AP0919 has a gray hilum
Ace	9071 has brown pods, Ace has tan pods
Apache	9071 has brown pods, Apache has black pods
B095	9071 is resistant to race 3 of Phytophthora, B095 is not
Bicentennial	9071 has gray pubescence, Bicentennial has tawny pubescence
Clay	9071 is resistant to Phytophthora race 2, Clay is susceptible
Chico	9071 has purple flowers, Chico has white flowers
Commander	9071 has brown pods, Commander has black pods
CX076	9071 is resistant to Phytophthora race 2, CX076 is susceptible
Dassel	9071 is susceptible to Phytophthora race 4, Dassel is not
Dawson	9071 is resistant to Phytophthora race 3, Dawson is not
DSR-066	9071 has a yellow hilum, DSR-066 has a black hilum
DSR-128	9071 has a yellow hilum, DSR-128 has a buff hilum
Evans	9071 has purple flowers, Evans has white flowers
Glenwood	9071 has a yellow hilum, Glenwood has an imperfect black hilum
Grande	9071 is resistant to Phytophthora race 2, Grande is not
J-081	9071 is resistant to Phytophthora race 1, J-081 is not
J-72	9071 has gray pubescence, J-72 has tawny pubescence
J-84A	9071 has purple flowers, J-84A has white flowers
J82	9071 has purple flowers, J82 has white flowers
J-033	9071 has purple flowers, J-033 has white flowers
J-083	9071 is resistant to Phytophthora race 3, J-083 is not
Lambert	9071 has a yellow hilum, Lambert has buff hilum
Maple Glen	9071 has gray pubescence, Maple Glen has tawny pubescence
Maple Donovan	9071 is resistant to Phytophthora race 2, Maple Donovan is not
Marathon	9071 has brown pods, Marathon has black pods
Merit	9071 has purple flowers, Merit has white flowers
OAC Aries	9071 has gray pubescence, OAC Aries has tawny pubescence
OAC Libra	9071 has purple flowers, OAC Libra has white flowers
OAC Musca	9071 is resistant to race 7 of Phytophthora, OAC Musca is not
OAC Pisces	9071 has purple flowers, OAC Pisces has white flowers

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

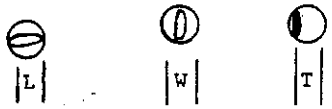
NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.		9071

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*	FOR OFFICIAL USE ONLY
700 Capital Square 400 Locust Street Des Moines, IA 50309	PVPO NUMBER 9300243

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][5] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[2] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[3] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [1] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [1] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [1] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

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19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [1] Pod and Stem Blight *(Diaporthe phaseolorum var; sojae)*

[1] Purple Seed Stain *(Cercospora kikuchii)*

[1] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

★ [2] Race 1 [2] Race 2 [2] Race 3 [1] Race 4 [1] Race 5 [0] Race 6 [2] Race 7

[2] Race 8 [2] Race 9 [2] Other *(Specify)* Races 10, 13, 17

VIRAL DISEASES:

[1] Bud Blight (Tobacco Ringspot Virus)

[1] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [1] Cowpea Mosaic (Cowpea Chlorotic Virus)

[1] Pod Mottle (Bean Pod Mottle Virus)

★ [1] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [1] Race 3 [0] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[1] OTHER DISEASE NOT ON FORM *(Specify):* White Mold (Sclerotinia sclerotiorum)

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [2] Iron Chlorosis on Calcareous Soil

[2] Other *(Specify)* Metribuzin sensitivity

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	9061	Seed Coat Luster	9061
Leaf Shape	9061	Seed Size	DAWSON
Leaf Color	9061	Seed Shape	9171
Leaf Size	9061	Seedling Pigmentation	BEESON

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9071 Submitted	131	1.8	72			38.9	22.4	15	
9061 Name of Similar Variety	130	1.7	73			37.8	22.1	14	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

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Oil and protein values are from bulked seed harvested from research plots. Research plots were planted using a randomized complete block design. Planted plot length was 21 feet, trimmed to 15 feet. Plot width was four 30 inch rows, or ten feet. Oil and protein values were determined using a Tecator 1255 spectrophotometer. Data is reported for the years indicated.

Table 1. Variety 9071 vs variety 9062 for percent protein (0% moisture basis).

1990

REP	9071 X1	9062 X2	X1-X2	(X1-X2)**2
1	41.5	43.4	-1.9	3.61
2	37.8	38.2	-0.4	0.16
3	35.8	38.8	-3	9
4	38.4	41.4	-3	9
sum	153.5	161.8	-8.3	21.77
ave	38.38	40.45	-2.08	

SD**2= (21.77 - (8.3**2)/4) / (4*3)
SD**2= 0.37896
SD= 0.6156
t = 2.08 / 0.6156
t = -3.3707 * significant .05 level
DF= 3
n groups of individuals = 4
ave protein of 9071 = 38.4%
ave protein of 9062 = 40.4%

1991

REP	9071 X1	9062 X2	X1-X2	(X1-X2)**2
1	42.1	44	-1.9	3.61
2	39.9	41.3	-1.4	1.96
3	39	40.7	-1.7	2.89
4	40.6	42.7	-2.1	4.41
5	40.9	42.4	-1.5	2.25
sum	202.5	211.1	-8.6	15.12
ave	40.5	42.22	-1.72	

SD**2= (15.12 - (8.6**2)/5)/ (5*4)
SD**2= 0.0164
SD= 0.12806
t = 1.72 / 0.12806
t = -13.431 ** significant .01 level
DF= 4
n groups of individuals = 5
ave protein of 9071 = 40.5%
ave protein of 9062 = 42.2%

1992

REP	9071 X1	9062 X2	X1-X2	(X1-X2)**2
1	40.8	42	-1.2	1.44
2	38.5	39.6	-1.1	1.21
3	39.9	41.4	-1.5	2.25
4	41.7	44.1	-2.4	5.76
5	36.5	39.5	-3	9
6	37.2	39.9	-2.7	7.29
7	40.9	43.2	-2.3	5.29
sum	275.5	289.7	-14.2	32.24
ave	39.36	41.39	-2.03	

SD**2= (32.24 - (14.2**2)/7)/ (7*6)
SD**2= 0.08177
SD= 0.28595
t = 2.03 / 0.28595
t = -7.0941 ** significant .01 level
DF= 6
n groups of individuals = 7
ave protein of 9071 = 39.4%
ave protein of 9062 = 41.4%

OVERALL

9071 X1	9062 X2	X1-X2	(X1-X2)**2
sum 631.5	662.6	-31.1	69.13
ave 39.47	41.41	-1.94	

SD**2= (69.13 - (31.1**2)/16)/ (16*15)
SD**2= 0.03616
SD= 0.19017
t = 1.94 / 0.19017
t = -10.221 ** significant .01 level
DF= 15
n groups of individuals = 16
ave protein of 9071 = 39.5%
ave protein of 9062 = 41.4%

Pioneer Hi-Bred Int'l, Inc.
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Table 2. Paired comparison of 9071 versus S06-57 for protein percentage (0% moisture basis).

YEAR/LOCATION ID	9071 (X1)	S06-57 (X2)	|(X1-X2)|	|(X1-X2)|^2
	percent			
1991 103A	39.5	43.5	4.0	16.00
1991 104A	40.9	43.9	3.0	9.00
1991 106A	40.9	44.6	3.7	13.69
SUM	121.3	132.0	10.7	38.69
MEAN	40.4	44.0	3.6 = $\bar{d}$	

N = 3

$$\text{SE DIFF } (s_{\bar{d}}) = \sqrt{\frac{38.69 - [(10.7)^2/3]}{(3)(2)}} = 0.30$$

$$T = \bar{d} / s_{\bar{d}} = \frac{3.6}{0.30} = 12.04$$, significant for 2 degrees of freedom at the 0.01 level

Table 3. Paired comparison of 9071 versus S06-57 for oil percentage (0% moisture basis).

YEAR/LOCATION ID	9071 (X1)	S06-57 (X2)	|(X1-X2)|	|(X1-X2)|^2
	percent			
1991 103A	24.3	21.1	3.2	10.24
1991 104A	22.8	20.1	2.7	7.29
1991 106A	23.5	20.1	3.4	11.56
SUM	70.6	61.3	9.3	29.09
MEAN	23.5	20.4	3.1 = $\bar{d}$	

N = 3

$$\text{SE DIFF } (s_{\bar{d}}) = \sqrt{\frac{29.09 - [(9.3)^2/3]}{(3)(2)}} = 0.21$$

$$T = \bar{d} / s_{\bar{d}} = \frac{3.1}{0.21} = 14.89$$, significant for 2 degrees of freedom at the 0.01 level

Pioneer Hi-Bred Int'l, Inc
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March 24, 1993

Exhibit D: In Exhibit C we have identified 9071 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle, and seed mottle. This does not mean that 9071 is any worse for these problems than other varieties of similar maturity. Rather, we do not consider 9071 to be immune to them. Therefore, we have chosen to be conservative and have identified the line as 'susceptible'.

Table 1. Isozyme information for 9071

ACO2	ACO3	ACO4	ACP	DIA	ENP	IDH1	IDH2	MDH	MPI	PGM	PHI
2	1	1	A	B	A	1	2	A	B	1	2

9071 is a mid to late group 0 variety. If group 0 maturities are divided in tenths, the relative maturity for 9071 is 0.7.

Exhibit E: Variety 9071 was developed by Pioneer Hi-Bred International, Inc., for which it solicits a certificate of protection.